WHAT IS CLAIMED IS:

1. A process comprising reducing a component selected from the group consisting of tungsten powders and molybdenum oxide powders, in the presence of alkali metal compounds, and preparing tungsten powder, molybdenum powder, mixtures thereof, or a carbide;

wherein at least two alkali metal compounds are used in a ratio so that mixed alkali tungstate or molybdate formed in an intermediate step ($(Li, Na, K)_2 WO_z$, $(Li, Na, K)_2MoO_z$) has a melting point of less than about 550°C, wherein the value of z is from 3 to 4.

2. The process of Claim 1, wherein the component selected from the group consisting of tungsten powders and molybdenum oxide powders is subjected to a carburizing treatment.

3. The process according to Claim 1, wherein the alkali compounds are used in a total amount that ranges from about 0.2 to about 1.5 mole %, based on the tungsten and/or molybdenum oxide.

4. The process according to Claim 1, wherein the alkali compounds have a molar ratio of Na to Li of from about 0.9 to about 1.26 and wherein, in the further presence of a potassium compound, the potassium replaces Na and/or Li up to about 40 mole %.

5. The process according to Claim 1, wherein the alkali compounds are used in a mixed salt.

6. The process according to Claim 1, wherein the alkali compounds are selected from the group consisting of oxides, hydroxides, carbonates, tungstates and molybdates.

7. The process according to Claim 1, wherein the tungsten oxide powder is WO_3 and the molybdenum oxide powder is MoO_3.

8. The process according to Claim 1, wherein the tungsten oxide powder is WO_2 and the molybdenum oxide powder is MoO_2.

9. The process according to Claim 1, wherein the reducing treatment is carried out in an atmosphere containing hydrogen and/or carbon monoxide and/or hydrocarbon.

10. A tungsten metal powder prepared according to Claim 1.

11. A molybdenum metal powder prepared according to Claim 1.

12. A tungsten carbide powder prepared according to Claim 1.

13. A tungsten carbide powder with an average particle size of >50 μm FSSS.

14. The tungsten carbide of Claim 13, wherein the tungsten carbide is a sintered hardmetal or an infiltrated tool.